Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE

AMERICAN NATURALIST

AN ILLUSTRATED MAGAZINE

OF

NATURAL HISTORY.

EDITED BY

ALPHEUS S. PACKARD AND EDWARD D. COPE.

ASSOCIATE EDITORS:

W. N. LOCKINGTON, DEP. OF GEOGRAPHY AND TRAVELS.
W. S. BAYLEY, DEP. MINERALOGY AND PETROGRAPHY.
PROF. C. E. BESSEY, DEPARTMENT OF BOTANY.
J. S. KINGSLEY, INVERTEBRATA.
JOHN A. RYDER, DEPARTMENT OF EMBRYOLOGY.
PROF. HENRY SEWALL, DEPARTMENT OF PHYSIOLOGY.
PROF. OTIS T. MASON, DEPARTMENT OF ANTHROPOLOGY.
DR. C. O. WHITMAN, DEPARTMENT OF MICROSCOPY.

VOLUME XX.

PHILADELPHIA:

1886.

CONTENTS.

Boulder Mosaics in Dakota. [Illustrated.] . . . . . *J. E. Todd* 1
A Study of the Dandelion. [Illustrated.] . . . . . *E. Lewis Sturtevant* 5
The Relations of Mind and Matter. (Concluded from p. 1159, December number) . . . . . *Charles Morris* 10
Some Notes on the Life-history of the Common Newt . . . . . *Nicolas Pike* 17
The Relation of the Pectoral Muscles of Birds to the Power of Flight . . . . . *Charles L. Edwards* 25
Geological Extinction and some of its Apparent Causes . . . . *A. S. Packard* 26
The Post-mortem Imbibition of Poisons . . . . . *George B. Miller* 101
Ascent of the Volcano of Popocatepetel. [Illustrated.] . . . . *A. S. Packard* 109
Notes on the Œcodomas, or Leaf-cutting Ants of Trinidad. [Illustrated.] . . . . . *C. Brent* 123
The Teredo, or Shipworm. [Illustrated.] . . . . . *R. E. C. Stearns* 131
The Flood Rock Explosion . . . . . *William Hosea Ballou* 137
Migration of Siouan Tribes. [Illustrated.] . . . . . *J. Owen Dorsey* 211
The Torture of the Fish-hawk. [Illustrated.] . . . . . *I. Lancaster* 223
A Study of Garden Lettuce . . . . . *E. L. Sturtevant* 230
Aquatic Respiration in Soft-shelled Turtles: A Contribution to the Physiology of Respiration in Vertebrates . . . . . *Simon H. and Susanna Phelps Gage* 233
Description of a new Subspecies of the common Eastern Chipmunk . . . . . *C. Hart Merriam* 239
Fish Remains and Tracks in the Triassic Rocks at Weehawken, N. J. [Illustrated.] . . . . . *L. P. Gratacap* 243
Resemblances in Arts widely separated . . . . . *Otis T. Mason* 246
The Ancestry of Nasua . . . . . *Samuel Lockwood* 321
The Mechanics of Soaring. [Illustrated.] . . . . . *I. Lancaster* 326
The Stone Ax in Vermont. [Illustrated.] . . . . . *Geo. H. Perkins* 333
Grosse's Classification and Structure of the Bird-lice or Mallophaga. [Illustrated.] . . . . . *G. Macloskie* 340
Track of a Cyclone which passed over Western Indiana more than three hundred years ago . . . . . *Jno. T. Campbell* 348
On the Mounting of Fossils. [Illustrated.] . . . . . *Franklin C. Hill* 353
The Limits of Organic Evolution . . . . . *H. W. Conn* 413
Ancient Rock Inscriptions in Eastern Dakota. [Illustrated.] . . *T. H. Lewis* 423
Variation of Water in Trees and Shrubs. [Illustrated.] . . . . *D. P. Penhallow* 425
Domestication of the Grizzly Bear . . . . . *John Dean Caton* 434
On the Nature and Origin of the so-called "Spiral Thread" of Tracheæ. [Illustrated.] . . . . . *A. S. Packard* 438
The Making of Man . . . . . *Charles Morris* 493
Review of the Progress of North American Invertebrate Palæontology for 1885 . . . . . *J. B. Marcou* 505
Gravitation and the Soaring Birds. [Illustrated.] . . . . . *I. Lancaster* 514
Causes of Forest Rotation . . . . . *John T. Campbell* 521, 851
Observations on Young Humming-birds . . . . . *H. S. Greenough* 528
The Mechanics of Soaring . . . . . *J. E. Hendricks* 532
A New Trap-door Spider. [Illustrated.] . . . . . *Geo. F. Atkinson* 583
A few Legendary Fragments from the Point Barrow Eskimos . *John Murdoch* 593
History of Celery. [Illustrated.] . . . . . *E. Lewis Sturtevant* 599
The Yellow-billed Magpie . . . . . *Barton W. Evermann* 607
The Phylogeny of the Camelidæ. [Illustrated.] . . . . . *E. D. Cope* 611
Ants' Nests and their Inhabitants . . . . . *John B. Smith* 679
Geographical and Geological Explorations in Brazil . . . . . *John C. Branner* 687

The Wings of Birds . . . . . *I. Lancaster* 701
Animal Traits . . . . . *I. Lancaster* 757
Navajo Names for Plants . . . . . *W. Matthews* 767
Some Deities and Demons of the Navajos . . . . . *W. Matthews* 841
Buffalo and Chicago, or "What Might Have Been?" . . . . . *E. W. Claypole* 856
The Arthropod Eye. [Illustrated.] . . . . . *J. S. Kingsley* 862
Comparative Studies upon Glaciation of North America, Great Britain and Ireland . . . . . *H. Carvill Lewis* 919
Some Peculiarities of the Local Drift of the Rocky Mountains . . *Theo. B. Comstock* 925
The Mammary Gland of the Elephant . . . . . *Spencer Trotter* 927
Is Littorina litorea introduced or indigenous? . . . . . *W. F. Ganong* 931
On Lemurine Reversion in Human Dentition . . . . . *E. D. Cope* 941
The Scallop and its Fishery . . . . . *Ernest Ingersoll* 1001
Super-metamorphism and Vulcanism . . . . . *Theo. B. Comstock* 1006
Zoic Maxima, or Periods of Numerical Variation in Animals . . . *L. P. Gratacap* 1009
The Peabody Museum's Explorations in Ohio . . . . . *F. W. Putnam* 1017
An Interesting Connecting Genus of Chordata . . . . . *E. D. Cope* 1027

EDITORS' TABLE.

The Naturalist, 40; State Academies of Science, 41; The Academy of Original Research, 140; Evolution of the Alphabet, 252; The bestiarians, 254; The relations of the National Academy of Sciences to the Government, 443; The Missing Link, 534; The U. S. Geological Survey, 536; A Government Department of Science and Public Instruction, 624; Theology on Evolution, 708; Illustration in U. S. Geological Survey Work, 709; The Method of Teaching Natural History, 868; The Recent Earthquake, 869; The U. S. Geological Survey, 870; Instruction and Investigation, 948; The Function of the American Naturalist, 1032.

RECENT LITERATURE.

Hornaday's Two Years in the Jungle [Illustrated], 42; Goodale's Vegetable Physiology, 45; Wood's Nature's Teachings, 47; Report of the State Geologist of New Jersey for 1884, 48; Fourteenth Annual Report of the Geology and Natural History Survey of Indiana, 48; Recent Books and Pamphlets, 48; The unpaired Fins of Selachians, 142; Bower and Vines' Practical Botany, 143; Torrey's Birds in the Bush, 145; Louis Agassiz, His Life and Correspondence, 145; Our Living World [Illustrated], 146; Recent Books and Pamphlets, 147; Coulter's Rocky Mountain Botany, 254; The Catalogue of Lizards in the British Museum, 256; Hartman's Anthropoid Apes [Illustrated], 258; Kane's Hand-book of European Butterflies, 258; Langille's Our Birds and their Haunts, 259; Our Living World, 259; Thompson's Bibliography of Protozoa, etc., 259; Recent Books and Pamphlets, 260; Croll's Climate and Cosmology, 359; Leunis' Synopsis der Thierkunde, 361; Beddoe's Races of Britain, 362; Zittel's Handbuch der Palæontologie, 362; Faxon's Revision of the Crawfish, 363; Graber's Animal Mechanics, 363; French's Butterflies of the Eastern United States, 364; Government Publications, 364; The Annals of the Cakchiquels, 444; Report of the New York Agricultural Experiment Station, 448; Schmidt's Mammalia in their Relation to Primeval Times, 450; Geikie's Class-book of Geology, 450; A Hand-book of Plant Dissection, 536; The Fourth Annual Report of the U. S. Geological Survey [Illustrated], 538; The Zoological Record for 1884, 538; The American Ornithologists' Union Check-list of North American Birds, 539; Recent Books and Pamphlets, 539; Gilbert's Topographic Features of Lake Shores [Illustrated], 626; Recent Books and Pamphlets, 628; The Olden Time Series, 710; Conn's Evolution of To-day, 711; Recent Books and Pamphlets, 712; Japanese Homes and their Surroundings [Illustrated], 778; Recent Books and Pamphlets, 794; Theodore H. Hittell's History of California, 871; Packard's First Lessons in Zoology, 873; Studies from the Biological Laboratories of the Owens College, 874; Recent Books and Pamphlets, 874; Milne's Earthquakes [Illustrated], 949; Wheeler's Report upon the Third International Geographical Congress, 955; The Morphogeny of the Vertebral Column in the Amniota, 956; Die Classen u. Ordnungen des Thierreichs in Wort u. Bild, 956; Recent Books and Pamphlets, 957; Smith's "Albatross," Crustacea, 1032; Sedgwick and Wilson's Biology, 1033; Whitfield's Brachiopoda and Lamellibranchiata of New Jersey, 1034; Recent Books and Pamphlets, 1034.

GENERAL NOTES.

Geography and Travels.—Asia: The Trigonometrical Survey of India, Mr. Hosie's Travels in China, Asiatic News, 50; Africa: Somaliland, The Lake Mœris, The Kassai Tributary of the Congo, African News, 52; Asia: The Rivers of the Punjab, Some Himalayan Peaks, M. Potaneri's Journey, Asiatic News, 148; America: The Claims of France in Brazil, American News, 151; Africa: Capello and Ivens' Journey, 153; General, 261; Arctic Regions, 261; Africa:

The Resources of Africa, Lieut. Wissman's Expedition, African News, 262; Asia: Southern India, Asiatic News, 264; America: The Goajira Peninsula, American News, 365; Asia: Col. Prejevalsky's Journey, Asiatic News, 365; Africa: British and German Protectorates, African News, 366; Europe: European News, 367; Asia: Railway projects in the Shan country, The Heri-rud valley, Asiatic Notes, 541; Africa: Mr. Kerr's Journey to Lake Nyassa, The Berbers, The Congo, 542; America: American News, 544; Europe: European News, 544; Asia: Tongking, The Survey of Japan, Asiatic News, 629; Asiatic Islands and Australia, etc., 630; Europe: European News, 631; America: American News, 631; Africa: African News, 632; Asia and the Islands: The Hill country of Assam, Mr. Carles upon Corea, New Guinea, Asiatic News, 714; Africa: Madagascar, Algeria, African News, 717; America: The Gran Chaco, 718; Ocean, 719; America: American News, 797; Asia: Persia, Exploration on the Lena, The Turki Tongues, Asiatic News, 797; Africa: The Congo, The Island of Diego Garcia, African News, 798; Asia: The Aralo-Caspian basin, Asiatic News, 876; America: American News, 878; Africa: Mr. Farini's Journey in the Kalahari, The Congo, African News, 878; Europe: European News, 881; General, 960; America: The Zingu, American News, 960; Africa: Mozambique, 961; Europe: Surveys in the Pyrenees, 962; Asia: Burmah, The Drying up of Siberian Lakes, 962; America: The Ruins of Copan, etc, American News, 1037; Europe and Asia: Lake Leman, The Pamir, 1038; Pacific Islands: Captain Bridges' Cruises, The New Zealand Earthquake, 1039; Africa: African News, 1041.

Geology and Palæontology.—Internal Chemical and Mechanical Erosion a Factor in Continent and Mountain Building, 53; Geological Survey of Belgium, 57; The Bed of the Ocean, 57; Geological News, 59; The Sternum of the Dinosauria [Illustrated], 153; Corrections of Notes on Dinocerata, 155; Discovery of lamellate thoracic Feet in the Phyllocarida, 155; Geological Survey of Pennsylvania, 156; Geological Survey of Minnesota, 156; Geological News, 156; The English Cretaceous, 266; On Proscorpius osbornei Whitfield, 269; An Extinct Dog, 274; The Vertebrate Fauna of the Ticholeptus Beds, 367; Scudder's Fossil Insects, 369; Oscar Schmidt on the Origin of the Domestic Dog, 370; Geological News, 372; The Plagiaulacidæ of the Puerco epoch, 451; "List of the Geological Formations of Spitzbergen," 451; Nicholson on Stromatoporidæ, 452; Fossil Hippopotami, 452; The long-spined Theromorpha of the Permian epoch, 544; The Report of the Congress of Geologists, 546; First Appearance of the Grasses, 546; Geological News, 547; The Fossil Man of Peñon, Mexico, 633; On the Fossil Flora of the Laramie Series of Western Canada, 635; Notes on the Variation of certain Tertiary Fossils in overlying beds [Illustrated], 637; Geological News, 638; Schlosser on the Phylogeny of the Ungulate Mammalia, 719; Geological News, 721; Walcott on the Cambrian of North America, 800; Geological News, 802; The Permian in Nebraska, 881; The Recent Earthquake in the United States, 883; Geological News, 884; A remarkable extinct Geyser Basin in S. W. Colorado, 963; Schlosser on Creodonta and Phenacodus, 965; Dollo on extinct Tortoises, 967; Geological News, 968; Notice of Geological Investigations along the eastern shore of Lake Champlain, made by Professor H. M. Seely and Prest. Ezra Brainard, 1041; The Veins of Southwestern Colorado, 1043; A giant Armadillo from the Miocene of Kansas, 1044; Geological News, 1046.

Mineralogy and Petrography.—American Minerals, 60; Microchemical Reactions, 62; Crystallographic News, 62; Miscellaneous, 63; Etched Figures, 158; Andesite, 160; Wildschönau Gabbro, 160; Petrographical News, 160; Miscellaneous, 161; Tin, 274; Petrographical News, 275; Mineralogical News, 277; New Books, 277; Hussak's "Determination of Rock-forming Minerals," 374; Petrographical News, 375; Mineralogical News, 376; Miscellaneous, 378; Mineralogical News, 453; Petrographical News, 455; Miscellaneous, 456; Petrographical News, 548; Mineralogical News, 550; Petrographical News, 640; Mineralogical News, 642; Petrographical News, 722; Mineralogical News, 725; Miscellaneous, 727; New Books, 1047; Mineralogical News, 1048; Petrographical News, 1049.

Botany.—The Asa Gray Vase, 63; Catalogue of the Plants of North America, 64; The De Candolle Prize, 64; The Drying of Wheat, 64; The Study of Plants in Winter, 65; The Botanical value of Agricultural Experiments, 65; Fertilization of Teucrium canadense, 66; Specimens of Cuscuta wanted, 67; Botanical News, 67; Can Varieties of Apples be distinguished by their Flowers [Illustrated], 162; Formation of Starch in the Leaves of the Vine, 165; The Production of Male and Female Plants, 166; Pear Blight Bacteria and the Horticulturists, 166; Botanical News, 166; The adventitious Inflorescence of Cuscuta glomerata known to the Germans, 278; Symbiosis between a Fungus and the Roots of flowering Plants, 279; Internal Spore-formation in Diatoms, 280; Botanical Laboratories in the United States, 281; Linhart's Ungarns Pilze, Century IV, 281; Botanical News, 282; Branching of Osmunda claytoniana [Illustrated], 379; Movements of Desmids, 379; Pleomorphism of Algæ, 380; Tree Growth on the Plains, 380; Botanical News, 381; Carbonaceous Reserve Food-materials in Fungi, 456; Hens-

low's Studies of Evaporation of Water from Plants, 457; Ellis and Everhart's North American Fungi, 458; Botanical News, 459; Variations of Tradescantia virginica, 551; Some abnormal Forms of Vaucheria [Illustrated], 552; Botany in Winter, 553; Figures of some American Conifers, 643; Strange Pollen-tubes of Lobelia [Illustrated], 644; Books on Fungi, 645; A Pocket Manual of Botany, 646; A cheap Hand-book of Mosses, 647; Botanical News, 648; Aids to Botanizing, 727; A Broader Elementary Botany, 728; Watson's Contributions to American Botany, XIII, 729; Botany at the Approaching Meeting of the A. A. A. S., 729; Botanical News, 729; The Phalloideæ or Stink-horn Fungi, 804; The Rust of the Ash Tree, 806; Twigs Killed by Telephone Wires, 806; An Instance of Individual Variation, 807; Botanical News, 807; Botanical Work of the American Association for the Advancement of Science, 886; The Botanical Club of the A. A. A. S., 888; Botanical News, 888; How shall Botany be taught in Agricultural Colleges, 970; Botanical News, 972; The Wind and the Tree-tops, 1051; A Hybrid Apple, 1052; Ruppia maritima L. in Nebraska, 1052; The Roughness of certain Uredospores, 1053; Another "Tumble-weed," 1053; Botanical News, 1054.

Entomology.—Recent Discovery of Carboniferous Insects, 68; Plateau's Experiments on Vision in Insects, 69; The Division of the Sexes of Hymenoptera, 71; Entomological News, 71; The Preparatory Stages of Calocampa cineritia Grote, 168; Morphology of Lepidoptera, 169; Flights of Locusts at San Luis Potosi, Mexico, 1885, 170; Longevity of Ants, 170; Entomological News, 171; Witlaczil on Psyllidæ [Illustrated], 283; Entomological News, 287; On the Cinurous Thysanura and Symphyla of Mexico, 382; The Locust in Southeastern Russia, 383; Entomological News, 384; Development of the Mole Cricket [Illustrated], 460; Development of the Honey Bee, 462; Lintner's Second Report as State Entomologist of New York, 464; Entomological News, 464; A carnivorous Butterfly Larva, Plant-lice feeding Habit of Fenesica tarquinius, 556; Witlaczil on Coccidæ, 557; The Origin of the Spiral Thread in Tracheæ, A Correction, 558; Destructive Locusts in Texas, 558; Entomological News, 559; Description of the Form of the Female in a Lampyrid (Zarhipis riversi Horn), 648; History of the Buffalo Gnat, 650; Larval Forms of Polydesmus canadensis, 651; Occurrence of early stages of Blepharocera, 651; Entomological Notes, 652; Hubbard's Insects Affecting the Orange, 730; Stridulating and Sense-organs in Diplopod Myriopoda, 731; Entomological News, 731; A new Arrangement of the Orders of Insects, 808; Luminous Organs of Mexican Cucuyo, 808; The Distribution of derived Plant-pigments in certain Larvæ, 810; The Fluid ejected by Notodontian Caterpillars, 811; Peculiar subcutaneous Organs in the Caterpillar of Catocala, 812; The Darkening of the Hairs of the Larva of Acronycta before Pupation, 813; An Eversible "Gland" in the Larva of Orgyia, 814; Entomological News, 814; The Organ of Smell in Arthropods, 889, 973; Coxal Glands in Spiders and perhaps Insects, 975; Heart of Insects, 976; Migrations of Ajax Butterfly, 976; Entomological News, 977; A remarkable case of Longevity in a Longicorn Beetle (Eburia quadrigeminata), 1055.

Zoology.—Living and Dead Protoplasm, 72; Sphærularia in America, 73; Notes on some Eastern Iowa Snails, 75; The Batrachian Intercentrum, 76; Antidote to the Scorpion's Sting, 172; The Crustacea of the Black Sea, 172; The Molting of the Lobster, 173; The Oldest Tarsus, 173; The Intercentrum of Living Reptilia, 174; The Intercentrum in Sphenodon, 175; On the Tarsus of Bats [Illustrated], 175; Range of the American Bison, 177; Zoological News, 177; The Proatlas, Atlas and Axis of the Crocodilia [Illustrated], 288; Three problematical Genera of Mexican Boæform Snakes, 293; Note on the Problem of Soaring Birds, 294; On the Types of Tooth-structure in Mammalia, 295; An extraordinary Human Dentition, 297; Zoological News, 297; Phosphorescence of Marine Animals, 385; The Fauna of the Aralo-caspian Basin, 387; Amœba infesting Sheep, 388; Desiccation of Rotifers, 388; Parasite of the Rock Oyster, 389; Sense-organs of Copepod Crustacea, 389; Birds breeding in Ants' Nests, 389; The Soaring of Birds, 390; Zoological News, 391; Markings of Animals, 465; Blind Crabs, 465; The Intercentrum in Sphenodon (Hatteria), 465; Zoological News, 466; Self-division in Septic Monads, 559; Blue Color of Animals, 561; Perception of Brightness and Color by Marine Animals, 561; The Sacrum of Menopoma [Illustrated], 561; Zoological News, 562; Physiological Selection, 653; Mechanics of Soaring, 653; Limulus in the Pacific, 654; The Swim-bladder of Fishes, 654; The former Southern Limits of the White or Polar Bear [Illustrated], 655; Zoological News, 659; Geographical Distribution of Pelagic Marine Animals, 732; Influence of High Pressures on Animal Tissues, 732; Shell Formation in Bivalve Mollusks, 732; Mechanism of Opening of the Shell of Mussels, 733; Abyssal Decapod Crustacea of the North Atlantic, 734; The Most Southern Salmon, 735; The Habits of Eublepharis variegatus Baird, 735; The Sense Organ in the Pineal Gland, 736; The Vertebræ of Sphenodon, 736; The Rattlesnake in New England, 736; Zoological News, 737; Hair-like Processes on Glandular Epithelium, 815; Organs of Flight, 815; Unusual Abundance of Aurelia aurita, 816; The Leeches of Japan, 816; Some Notes on Bird Migrations, 817; Bambeke on Heredity, 819; Domestication of Wild Fowl, 820;

Zoological News, 821; Reproduction of the Viscera in the Feather-stars, 894; The Leeches of Japan, 895; Myriapod Anatomy, 895; Leptodora in America, 896; Nervous Physiology of the Lobster, 896; Mortality of Fish at Lake Mille Lac, Minnesota, 896; Longevity of Turtles, 897; Gapes in Fowls, 898; Protracted Flight of a Golden Plover, 898; Notes on the Zoological Gardens at Antwerp and London, 900; Human Cerebral Fissures, their Relations and Names and the methods of studying them [Illustrated], 901; Zoological News, 902; Classification of Sponges, 977; New Freshwater Cœlenterate, 978; Nervous System of the Sea-urchin, 978; The Crustacean Carapax, 978; Development of Phyllopods, 979; The Ribs of Sphenodon (Hatteria), 979; Birds killed by electric light towers at Decatur, Ill., 981; Zoological News, 981; Leptodora in America, 1057; Blood of Invertebrates, 1058; The Byssal Organ in Lamellibranchs, 1059; On the class Podostomata, a group embracing the Merostomata and Trilobites, 1060; Oyster Culture, 1061; Echinoderm Development, 1061; The Brazza Exhibition at Paris, 1062; Zoological News, 1061.

Embryology.—The Development of the Toad-fish, 77; The Origin of the Amnion [Illustrated], 179; The Development of Anurida maritima Guerin [Illustrated], 299; On an unusual Relation of the Notochord to the Intestine in the Chick [Illustrated], 392; Professor Selenka on the Development of the Opossum (Didelphys virginiana), 394; On the Symmetry of the first segmentation Furrows of the Blastodisk of Elasmobranchii [Illustrated], 470: 1. The Development of Patella, 563; 2. TheD evelopment of Dentalium, 565; 3. The Development of Chitonidæ or Polyplacophora, 565; 4. The Development of the Gill in Fasciolaria, 567; The early Development of Julus terrestris, 662; The Development of Agelena nævia, 666; Embryology of Armadillos, 667; The Metamorphosis of the American Lobster, Homarus americanus H. Milne-Edwards, 739; The Monstrosities observed amongst recently hatched Lobsters, 742; The Development of the Mud-minnow, 823; The Development of Fundulus heteroclitus, 824; Observations on the Embryology of Spiders, 825; Why do certain Fish Ova Float? 986; The Origin of the Pigment cells which invest the Oil-drop in Pelagic Fish Embryos, 987; The Life-history of Thalassema, 988.

Physiology.—Conditions which determine Coagulation of the Blood, 80; Special Physiology of the Embryo, 80; Are the Muscles Dead or Alive during Cadaveric Rigidity? 81; Glandular and Vaso-motor Fibers of the Chorda Tympani and Glossopharyngeal Nerves, 82; The Existence of two kinds of Sensibility toward Light, 185; The Circulation in Ganglion Cells, 186; Pasteur's Method for the Prevention of Hydrophobia, 186; Report of Committee on Disinfectants of the American Public Health Association, 302; Recent Investigations on the Respiratory Center, 304; The action of Sulphate of Sparteine on the Heart, 396; The Microbe of Hydrophobia, 397; The Transformation of Peptones by the Liver, and the relation of the Sugar in the Blood to the Nature of the Food Supply, 397; Plethysmographic and Vaso-motor Experiments with Frogs, 399; Glycogenic Function of the Liver, 473; The Delicacy of the Sense of Smell, 826; Some Notes on Recalcification of Human Teeth, 989.

Psychology.—The Material Conditions of Memory, 83; Sir J. Lubbock on the Intelligence of the Dog, 188; Intelligence of Anthropoid Apes, 306; Dr. Preyer's Criticism of Telepathy, 307; Menault's Intelligence of Animals, 308; Anthropology and Psychology, 400; Philadelphia Branch American Society for Psychical Research, 401; Meynert's Psychiatry, Vol. 1 [Illustrated], 474; Intelligence of the Hen and Opossum, 568; The Swallow as a Surgeon, 568; Gambetta's Brain, 668; Memory in the Humble Bee, 669; The Vision of Birds, 670; A Curious Superstition, 744; The Copperhead and other Snakes, 744; Canine Reason, 827; The Dreams of the Blind, 904.

Anthropology.—Stone Plummets, 85; Polynesia, 86; Annual Report of Progress, 86; The "Indian Local Names," 87; Anthropological News, 87; Some Moot Points in American Archæology, 192; An Important Contribution to Californian Folk-lore, 194; Kiche Grammar, 195; The Anthropological Society of Washington, 195; Ethnology of Borneo, 196; The Eskimo of Point Barrow, 197; The Blow Tube in the United States, 198; Physical Education of Children, 199; Annual Report of the Bureau of Ethnology, 309; The Crania of Negroes, 312; Lacustrian Antiquities of Dr. Gross, 312; Recent Articles by Dr. Tschudi, 313; Supplement to the Grammar of the Cakchiquel language, 313; Maori Pharmacopœia, 401; The Laplanders, 402; Relationships between Eskimo Tribes, 403; Archæological Map, 403; The Revue d'Anthropologie, 404; The Races of Men, 404; Anthropological News, 406; The Aboriginal Ax of the Salt River Valley, Arizona [Illustrated], 479; The so-called Deformed Crania, 481; Corea, 569; The Relation of Anthropology to the Science of Mind, 570; Jewish Ability, 571; The Mangue Language, 572; "Tableau des Bacabs," 572; Aboriginal Baking Pans, 573; War-clubs *vs.* Digging-sticks, 574; The Aztec Language, 574; The Davenport Academy, 671; Vocabu-

lary of Archery, 673; Child Growth, 745; Skull of Adult with Frontal Suture, 748; The Bathekes, 750; The Nicobarese, 750; Anthropological Nomenclature, 828; The Parts of Eskimo Harpoons, 828; Anthropology in Brazil, 831; Manufacture of Bows and Arrows among the Natano (Hupa) and Kenuck (Klamath) Indians, 832; Californian and Polynesian Fish-hooks, 833; Ancient Egyptian Classification of the Races of Man, 834; Anthropometry, 905; The Cephalic Index, 906; The Peabody Museum, 907; West Indian Stone Implements, 908; Indian Children's Games, 908; Ancient Commerce, 908; The Fijian Nanga Custom, 909; Melanesia, 909; Archæological Frauds, 910; Folk-lore, 991; Arrow Release, 995; The Origin of Languages, 997; Australian Medicine Men, 1067; The Iconographic Encyclopædia, 1070.

Microscopy.—The Eye of Insects, 88; Grenacher's Methods of Preparing the Arthropod Eye, 89; Method of Examining the Reflex in the Compound Eye of Insects, 90; Method of Isolating the Dioptric Layers of the Compound Eye, 91; The Sac-like Nature of the Wings of Insects, 92; Osmic Acid and Merkel's Fluid as a means of developing nascent histological Distinctions, 200; The Function of the Compound Eye, 203; A method of bleaching Wings of Lepidoptera to facilitate the study of their Venation, 204; Natural Injection, 313; Methods of Injecting Annelids, 314; An Injection-mass to be used Cold, 314; Method of Killing Gephyrea, 315; A Macerating Mixture, 315; Haller's Macerating Fluid, 316; The Dioptrograph [Illustrated], 406; Opalina, 408; An Alcoholic Drip for the Thoma-Jung Microtome [Illustrated], 488; Structure of the Human Skin [Illustrated], 575; Karyokinesis, 578; A Staining Dish [Illustrated], 675; Some Laboratory Appliances [Illustrated], 910; Revolving Automatic Microtome [Illustrated], 1071; Embryograph for use with Zeiss Microscope [Illustrated], 1073.

SCIENTIFIC NEWS, 92, 205, 316, 410, 491, 578, 676, 751, 834, 916, 999, 1074.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

The International Geological Congress, 94; National Academy of Sciences, 99; Academy of Sciences of Indiana, 100; New York Academy of Sciences, 100; Society of Naturalists Eastern U. S., 207; American Philosophical Society, 208; Biological Society of Washington, 209; American Ornithologist Union, 209; Linnæan Society of Lancaster, 208; New York Academy of Sciences, 210; Boston Society of Natural History, 210; Appalachian Mountain Club, 210; Indiana Academy of Sciences, 318; The American Committee of the International Congress of Geologists, 319; New York Academy of Sciences, 320; Boston Society of Natural History, 320; Appalachian Mountain Club, 320; The Cincinnati Society of Natural History, 320; Crawfordsville Scientific Society, 320; Biological Society of Washington, 412; New York Academy of Sciences, 412; Appalachian Mountain Club, 412; National Academy of Sciences, 481, 580; Biological Society of Washington, 580; New York Academy of Sciences, 581; Boston Society of Natural History, 581; Appalachian Mountain Club, 582; Biological Society of Washington, 678; Boston Society of Natural History, 678; Philadelphia Academy of Sciences, 752; The Indiana Academy of Sciences, 755; American Association for the Advancement of Science, 836; Philadelphia Academy Natural Sciences, 916; American Philosophical Society, 999; Philadelphia Academy of Natural Sciences, 1000; National Academy of Sciences, 1076; Biological Society of Washington, 1077; New York Academy of Sciences, 1077; Boston Society of Natural History, 1077